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22 January 2015

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Illinois Environmental Protection Agency
1021 North Grand Avenue East
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Subject: Response to Comments
Pre-Final Remedial Design Report, Drawings and Specifications
MIG/DeWane Landfill Superfund Site (Site)
Belvidere-Boone County, Illinois

Dear Ms. Wilson:

On behalf of BFI Waste Systems of North America, LLC (BFINA), this letter presents a response to Illinois Environmental Protection Agency (IEPA) comments dated 22 July 2014 on the Pre-Final Remedial Design Report submitted by Geosyntec on behalf of BFINA on 2 May 2014. This letter also transmits these documents that reflect IEPA comments including the Final Remedial Design Report, the Final Remedial Design Drawings and the Final Specifications, revised based on the 22 July 2014 IEPA comments as presented in the responses listed below.

The following paragraphs address the 22 July 2014 IEPA comments on the subject report, drawings and specifications. To keep the length of this response a reasonable length, the IEPA comments are not repeated herein, the responses below reference the IEPA comments in the numerical order from the 22 July 2014 IEPA comment letter. Responses to the IEPA review comments on the Site Quality Assurance Project Plan (QAPP) (IEPA comments 146 to 177) were submitted to IEPA under separate cover on 6 January 2015.

Responses to IEPA Comments

1. The estimate of the area of the top deck of the landfill in the Modified Remedy Technical Memorandum (Tech Memo) was based on a survey completed in 2006 (2.5-3.4 acres, 15-20% of the top deck). Prior to the start of the Pre-Final Remedial Design (RD), a new survey of the landfill was completed and found that approximately 5.0 acres (approximately 30%) of the top deck of the landfill was below the required 3.0% grade due to additional differential settlement of the landfill since 2006 (see attached **Figure 1**). Unfortunately, the areas with grades less than 3.0% are not adjacent and are spread out across the top deck of the landfill (see **Figure 1**). The spacing of the areas with grades less than 3.0% and the associated fill required to bring the grades up to

3.0% also require grading of adjacent areas to blend in the filled areas to have a consistent 3.0% grade thought out the top deck of the landfill. Of the approximate 16.8 acre top deck, approximately 13.4 acres (80%) requires earthwork to meet the minimum 3.0% grade.

The estimate of the area of the side slopes of the landfill in the Tech Memo indicated that approximately 19.3 acres would require improvement to achieve a minimum 3 foot thick cover. This estimate is still accurate to achieve a minimum 3 foot thick cover, however, there are two items which require an additional 2.9 acres of improvement (for a total of 22.2 acres) on the side slopes: 1) there are 3 areas of the side slopes that have flat grades (<3.0% minimum requirement, after review of the 2014 survey) which are required to be adjusted, and 2) a small area along the upslope edge of areas to be thickened, which is required to blend in the additional cover material to have a uniform cover.

Additionally, several mid-slope stormwater benches have been moved to eliminate earthwork on the cover where regrading to achieve the minimum grade (3.0%) and minimum thickness (3.0 feet) would not otherwise be required.

2. The table of contents has been revised to be consistent with the titles of the table, figures and appendices of the Final Remedial Design Report (RD Report).

3. The cover pages of the RD Report, the Drawings, and the Specifications have been revised to include a designation as Volume I, Volume II, and Volume III, respectively. These designations are also indicated in the table of contents of the RD Report.

4. The text in Section 3.1.2 was revised to clarify the property restrictions. Section 3.1.2 was revised to state:

"Property Restrictions

To implement the requisite deed restrictions, BFINA recorded the Consent Decree, with the Boone County recorder. BFINA understands that the Agency is now requesting an additional deed restriction be recorded that complies with Illinois' recent implementation of the Uniform Environmental Covenants Act. BFINA is working with the property owners to draft those covenants and will make them available to the IEPA for review and approval as soon as possible."

5. As indicated above in response to Comment #4, BFINA recorded the Consent Decree with the Boone County Recorder. BFINA understands that the Agency is now requesting an additional deed restriction be recorded that complies with Illinois' recent implementation of the Uniform Environmental Covenants Act. BFINA is working with the property owners to draft those covenants and will make them available to the IEPA for review and approval as soon as possible.

6. The reference to IEPA issuing a No Further Remediation letter to terminate the Groundwater Management Zone has been removed as requested in Section 3.1.3.

7. The text in question (Section 3.2.2) was revised to reflect the dates of the sampling and to clearly state that composite samples were obtained to assess that the leachate is not hazardous. The text was revised to state: "*The leachate is not hazardous based on concentrations of constituents from composite samples of the four leachate piezometers on-site from three separate sampling events. The sampling events were conducted in November 2006, April 2010, and December 2011 (see **Table 3-2**).*"

8. The text in the RD Report (Section 3.2.3) was revised to indicate the criteria are the action levels defined in the ROD and that BFINA, in agreement with IEPA, will be responsible for concluding that action levels were exceeded due to leachate from the landfill (and not some other source). The text in the RD Report was revised to state: "*If the concentration of any of the groundwater quality COCs meet or exceed the action levels defined in the ROD for two quarterly groundwater sampling events within any four consecutive quarters, and if BFINA with agreement from IEPA concludes that the occurrences are due to leachate from the Landfill (and not some other source), then the exceedance will trigger the contingency leachate removal process that requires the implementation of the alternative remediation measures (ROD page 62).*"

9. The sediments will be disposed of in the designated refuse area (DRA). The text of the RD Report (Section 3.2.3) was revised to state: "*The sediments will be disposed of in the Landfill below the improved IRM cover system within the designated refuse area (DRA) located on the crest of the landfill and will have the required 3-feet minimum cover. The DRA is shown on the Design Drawings for the improved IRM cover and are located in **Appendix A.***"

10. The determination if landfill gas from any active landfill gas extraction system will be flared or vented will take place at the time of the design of the active landfill gas extraction system. The current design does not include an active gas extraction system.

An active gas extraction system would only be implemented if post remedy monitoring data indicate an active system is necessary. The text of the RD Report (Section 3.3.1) was revised to state: "*However, the design of above grade piping and equipment of a potential active gas extraction system would be completed should it become necessary during the post-closure period. The design of the potential active gas system will include an evaluation of whether the landfill gas should be flared or vented.*"

11. The text of the RD Report (Section 3.4.3) was revised to state: "*All stockpiles will be constructed in accordance with Specification 02200 – Earthwork (see **Appendix B**).*" Specification 02200 was also revised to include Boone County Subdivision Regulations Section 510 as a reference.

12. The text of the RD Report (Section 3.4.5 – Improved IRM Cover – Side Slopes) was revised to state: "*If soil from stormwater pond excavations is planned for use as Clay Fill, the soil source will have to be approved by the Engineer such that the proposed Clay Fill exhibits the required properties in accordance with Part 2.01 of the 02200 Earthwork Specification (**Appendix B**).*"

13. Page 84 of Record of Decision indicates that "As part of the remedial design, Interim Remedial Measures (IRM) cap material or underlying grading fill may be considered for use as foundation layer material for landfill side slopes. Soil material from the top of the landfill will only be used for this purpose to the extent that the remaining cap material thickness satisfies all applicable design criteria including all foundation layer criteria, permeability criteria as appropriate, and final grading criteria." Although at the time of the ROD it was not anticipated that IRM cap materials would be re-used as a low permeability layer (a Geosynthetic Clay Liner (GCL) was anticipated), the ROD indicates that cap material may be re-used as long as the remaining cap material meets applicable design criteria (including thickness, permeability, and final grading criteria). As stated in the RD report, the applicable design criteria for the landfill cover is a minimum three (3) feet thickness over the entire landfill footprint with a permeability value equal to or less than 10^{-7} cm/s in accordance with 35 IAC 811.314 (Part 811 cover).

    Based on the discussion above, Section 3.4.3 of the RD Report (IRM Crest) is revised to read as follows: "*The low permeability portion of the IRM cover on the crest of the Landfill shall be maintained at a minimum of three feet thick. The ESD identified that there is more than three feet of low permeability cover on the crest of the Landfill. In accordance with the ROD excess cap may be reused if the remaining cap material*

satisfies all applicable design criteria (including thickness, permeability and final grading criteria (ROD page 84)."

14. The text of the RD report (Section 3.5.2) was revised to include the statement: "*The specification for soil and sediment erosion control was prepared to guide the management of stormwater and was based on the ARARs discussed above (see Specification 02105 – Erosion and Sediment Control in* ***Appendix B).***"

15. BFINA and Geosyntec will await IEPA's official response as noted in the comment.

16. There are approximately 28 drums of IDW from pervious investigations located in a fenced area on the east side of the landfill, near the leachate impoundment. The drums are from the pre-design investigation which was conducted at the site in 2006. As discussed with IEPA, the drums of IDW will be opened and emptied into the DRA and the empty drums will be disposed of off-site. Section 5.2 of the RD report has been updated to state: *Existing drums of IDW will be opened and emptied into the DRA and empty drums will be disposed of off-site.*

17. BFINA will dispose of any metal or wood debris from the decommissioning of the abandoned gas management system in an off-site landfill. The text of the RD report (Section 5.2) is revised to state: "*The abandoned gas management facility on the east side of the Site will be dismantled and disposed of at an off-site landfill. The materials to be disposed of off-site include fencing, a small shed, and metal and wood debris.*"

18. All references to a "trench" for disposal of Investigation Derived Waste (IDW) have been clarified to refer to the Designated Refuse Area (DRA) as defined on the Remedial Design Drawings.

19. Timing of the DRA closure will be such that the DRA will be open as long as waste is being exposed from trenching of the leachate collection trenches and the leachate impoundment is being closed. If for any reason, additional waste is exposed after the DRA is closed, another section of DRA, adjacent to the closed DRA, will be opened to dispose of the waste. BFINA's contractor will be providing an "order of events" schedule, which is referenced and attached in Section 7.2 of the RD Report.

20. This comment was addressed as part of IEPA Comment #2.

21. A divider tab for Appendix G is provided as part of the submitted revised document.

22. The subgrade on which the Clay Fill (lower permeability layer) will be constructed is six inches below the top of existing topsoil. A line is added on the Final Cover Plan (Drawing 12) to identify those areas where additional Clay Fill will be constructed. Therefore, a separate subgrade plan is not believed to be necessary and BFINA requests that one not be included in the drawing set. Because of the nature of the cover improvement, grades will change constantly around the landfill, and typical cross sections would not accurately depict cut and fill requirements. A substantial amount of cross sections would be needed to capture the many different cut and fill requirements. The selected contractor has informed Geosyntec that they intend to utilize a GPS equipped bulldozer for earthwork and will use stakes to identify the amount of cut and fill needed at each location. Therefore, cross sections detailing amount of cut and fill are not considered necessary and are requested to not be included in the drawing set.

23. A revised storm water management plan has been developed to reduce the complexity of the storm water plan and is presented to IEPA as Drawings #13 through #18. The revised plan substantially reduces the number of storm water benches, increases the distance between drainage benches along the side slopes of the landfill, and eliminates a number of downchutes. The revised plan also uses covered HDPE piping for downchutes instead of fabric-formed concrete.

24. The following are responses to individual bullets listed for IEPA comment #24.

a. The drainage area for Pond 1 includes off-site runoff that is not being reduced to a 0.2 cfs per acre release rate. In the Stormwater Evaluation portion of the Remedial Design Report (Appendix F), Table 2 shows the details on how the allowable release rate of 10.8 cfs for Pond 1 was calculated.
b. These tables have been reformatted to show the complete information and are part of the revised Stormwater Evaluation in Appendix F of the Final Remedial Design Report, dated December 2014.
c. The manually-input discharge rating curve was based on the results of a HY8 hydraulic analysis of the pipe between the center outlet structure and the pond. The HY8 analysis included a tailwater rating curve that represented the hydraulic constraints of the outlet structure's center orifice and overflow weir. During large storm events, the weir within the outlet structure is activated but total flow is limited by the capacity of the upstream pipe leading into the outlet structure (the overflow spillway directly from the open pond is not activated. The results from the HY8 analysis are included in the revised

Stormwater Evaluation (see Appendix F of the Final Remedial Design Report, dated December 2014).

d. The HEC-HMS input data previously labeled as the Pond 3 input data was actually the Pond 4 outlet data. The pond was modeled with the correct starting elevation; it was only the input data screenshot that was incorrectly labeled. Subsequently, the normal water elevation of Pond 3 has been modified, and the modeling and printouts have been updated (see the revised Stormwater Evaluation [Appendix F] in the Final Remedial Design Report, dated December 2014).

e. Energy dissipation at culvert outlets is provided using riprap pads as shown in the detail and data table on Drawing Number 17. Energy dissipation at downchute outlets is provided using riprap stilling pools. These energy dissipation pools were designed according to the methodology of the Federal Highway Administration publication HEC-14, *Hydraulic Design of Energy Dissipators for Culverts and Channels*, Chapter 10. Calculations for culvert and downchute discharges were performed in the HEC-HMS hydrologic model. Detailed modeling information is presented in Attachment 5 of the Stormwater Evaluation (see Appendix F of the Final Remedial Design Report).

f. Hydraulic calculations for all culverts are now included in the revised Stormwater Evaluation (see Appendix F of the Final Remedial Design Report, dated December 2014). HY8 analyses were performed for each culvert.

25. The Designated Refuse Area (DRA) was specified to be located at the top of the landfill because the clay cover at this location is as much as 19-ft thick. Locating the DRA at the top of landfill allows a smaller foot print to be utilized without exposing waste beneath the cover (a greater depth of the DRA is possible, resulting in smaller square footage of DRA to dispose the volume of generated waste). If the DRA is located on the side slope, a larger portion of the landfill cover will be disturbed to accommodate generated waste. Additionally, the waste beneath the cover may be exposed during operations and significant leachate could be generated by site rainfall on exposed waste.

26. A different line type has been used for leachate collection pipe and leachate transmission pipe. The distinction between leachate collection and transmission pipes is also clarified with Note 19 on Drawing 6. Transition locations between the two pipes are clarified on Drawing 6.

27. Note 3 (revised to Note 5) has been revised to indicate the remedial contractor's consultant reported that the wetland boundaries are the same as those defined in the 2007. Wetland delineation was performed by the remedial contractor's consultant in September 2014 and the summary report was provided to Geosyntec in October 2014.

28. As a response to the IEPA comment on Note 7 (revised to Note 9) a new Note 3 has been added to indicate that inactive gas collection system parts shall be disposed at an offsite facility.

29. A note indicating that no waste should be stockpiled for placement into the DRA was added to the end of Note 7 (revised to Note 9) on Drawing 6.

30. The bridging layer is defined in Paragraph I of Section 3.03 of Section 02300 of the Specifications. It is a one foot thick layer of General Fill. The bridging layer is also clarified in Note 10 (revised to Note 12) on Drawing 6.

31. Placement specifications for Clay Fill and Vegetative Soil Layer are provided in Part 3.06 of Section 02200 of the Specifications. Referral to this specification was provided in Note 10 (revised to Note 12) on Drawing 6.

32. Note 12 (revised to Note 14) on Drawing 6 was revised to indicate a minimum of six inches of soil should be used for daily cover thickness.

33. The compaction requirement for waste is provided in Part 3.03 of Section 02300 of the Specifications. Referral to this specification was provided in Note 12 (revised to Note 14) on Drawing 6.

34. The Trench Backfill is specified in Note 4 on Drawing 8. Trench Backfill specifications are also provided in Section 02300 of the Specifications.

35. As noted in our Request for Partial Approval on 21 October 2014, the diameter of the force main was changed from two inches to three inches. Note 14 for Detail 2 and Note 11 for Details 3 and 4 were revised to indicate a force main diameter of 3-in.[1]

36. New Notes 20 and 21 for Details 1 and 2 have been added to indicate that leachate collection pipe should be placed minimum of 1 ft into the waste and that the trench depth is not tied to a specific depth.

37. As noted in our Request for Partial Approval on 21 October 2014, placement specifications for Clay Fill and Vegetative Soil Layer are provided in Part 3.06 of

[1] Please note that additional IEPA comments on 7 November 2014 on the Request for Partial Approval are addressed under separate cover.

Section 02200 of the Specifications. Note 7 on Drawing 8 has been revised to have a referral to this specific section of the Specifications.[1]

38. As noted in our Request for Partial Approval on 21 October 2014, Drawing 8, Details 1 through 4 were revised to have a minimum of six inches of spacing between the pipes and trench walls. This is also clarified in Note 16 for Details 1 and 2, and Note 12 for Details 3 and 4.[1]

39. As noted in our Request for Partial Approval on 21 October 2014, Detail 4 on Drawing 8 depicts the cross-section along Section L. Along Section L, there are no Leachate Transmission Pipes. There are Force Mains that convey leachate from the underground tanks to above ground tank.[1]

40. The grout plug under the pipe is increased to be one foot thick and extend a minimum of four feet beyond the edge of waste. Accordingly, seepage collar was specified to extend minimum of one and half foot into the waste. Please see Details 1 and 2 on Drawing 9.

41. Between Stations 4+00 and 5+75 along Section E, the leachate collection system extends beyond the edge of waste but then proceeds back into the waste to get to the SE storage tank. This was necessary, otherwise the depth of the trench along Section I would be too deep to reasonably construct. When the leachate collection system extends beyond the edge of waste, the leachate piping needs to be solid wall. This detail refers to connection from the leachate transmission pipe to leachate collection pipe at Station ~5+75 along Section E on Drawing 6.

42. Detail 1 on Drawing 10 has been revised for clarification. The detail depicts two separate “Y” sections for two separate leachate collection pipes, one of which is shaded. A 45 degree bend was selected based on our previous landfill design experience.

43. The available installation drawings provided by the manufacturer are specific to roof type installation. Therefore, we are asking the Contractor to provide a connection detail that he/she feels comfortable procuring and installing.

44. The legend on Drawing 11 was revised to show the “E” symbol.

45. Geosyntec proposes to keep the limit of excavation as defined on Drawing 11. If the limit of excavation was revised to be five feet east of the existing structures, the volume of Clay Fill that would be generated would be substantially reduced. If the contractor damages existing structures, he/she is responsible for fixing or replacing the damaged equipment. Additionally, the gas extraction wells have been decommissioned and are not expected to return to use.

46. Because of the nature of the cover improvement, grades will change constantly around the landfill. A substantial amount of cross sections would be needed to clarify cut and fill requirements. The selected contractor has informed Geosyntec that they intent to utilize a GPS equipped bulldozer for earthwork and will use stakes to identify the amount of cut and fill needed at each location. The minimum grade requirement is clarified in Note 14 on Drawing 12. Therefore, cross sections detailing amount of cut and fill are not considered necessary and are requested to not be included in the drawing set.

47. Note 6 on Drawing 12 was revised to provide a clear set of criteria to determine the extent of topsoil areas that need to be stripped.

48. The word “Minimum” was added to Note 16 on Drawing 12.

49. Note numbers have been corrected on Drawing 13.

50. The current landfill side slopes handle stormwater very well, with only minor repairs for ruts and rills required. As indicated in the response to the IEPA comment, a revised storm water management plan has been developed to reduce the complexity of storm water management and is presented as Drawings #13 through #18. The revised plan reduces the number of storm water benches, increases the distance between drainage benches along the side slopes of the landfill, and eliminates a number of downchutes. The revised plan also uses covered HDPE piping for downchutes instead of fabric-formed concrete.

51. The spacing between berms was addressed by the revised stormwater design as described in response to IEPA comment #50 above.

52. On the grading/drainage plan, the line for the drainage bench shown parallel to and just east of the west access road is representing the drainage channel at the toe of the road embankment. In effect, the road embankment forms the outer berm of the drainage

bench. There will not be a second, separate berm between the drainageway bottom and the road, so the roadside channel is functioning as the drainage bench.

53. We concur that there were opportunities to remove or reduce benches on the flatter top deck area, and this was incorporated into the drainage layout redesign. Benches in the top deck area are now limited to a single bench around the perimeter of the top deck.

54. Storm water bench 1A-4 was removed from Drawing 13 as part of the revised storm water management system design.

55. Detail 1 on Sheet 19, showing the access road cross section, has been revised to show a layer of stone protection extending westward from the toe of the road embankment, to form a drainage swale with an armored lining. The stone will extend horizontally four feet west of the swale bottom. More information on the type of aggregate is provided in the detail.

56. The use of a 3H:1V side slope on the water-carrying side of the berm provided greater flow area and therefore additional hydraulic capacity at the same depth of flow. This in turn reduced shear stress and increased water freeboard, compared to a steeper berm. Therefore, side slopes were changed to 2H:1V on the downslope side of the berm, but kept at 3H:1V on the water-carrying side of the berm.

57. Please see the response to IEPA comment #56.

58. Alternative downchute lining materials are now being used in lieu of fabric-formed concrete lining.

59. In light of the bid prices received for the fabric-formed channel construction, alternative downchute materials were considered, and the revised design calls for anchored, covered, HDPE pipe to be used for downchutes.

60. Drawing 15 has undergone a major revision to the change downchute design from fabric-formed concrete downchutes to HDPE pipes. Downchute Bedding material specifications are referred in Note 2 of Section C.

61. Drawing 15 has undergone a major revision to change downchute design from fabric-formed concrete downchutes to HDPE pipes, and the figure mentioned in the comment no longer exists.

62. Drawing 16 has undergone a major revision to change downchute design from fabric-formed concrete downchutes to HDPE pipes, and the Detail 1 on Drawing 16 mentioned in the comment no longer exists.

63. Fabric-formed concrete is no longer being used for downchutes. Energy dissipation is provided at the end of the HDPE pipe downchutes using riprap-lined dissipation pools, as discussed in the response to IEPA comment 24e. The stormwater system redesign also eliminated locations where runoff was required to make a 90 degree turn at the end of a downchute.

64. The "turns" identified in IEPA comment #64 were eliminated as part of the stormwater redesign and the use of HDPE pipe for downchutes with riprap dissipation pools at downchute outlets.

65. A plan view showing the arrangement of bollards was added to Section A on Drawing 17.

66. The location of the arrow is updated on Detail 1 (revised to Detail 3), Drawing 17.

67. A note is provided for Details 2 and 3 (revised to Details 1 and 2) on Drawing 17 referring to a table on Drawing 13 that summarizes pipe diameters.

68. One of the primary reasons for selecting a precast concrete element, in addition to overall durability and robustness, was the ability to integrate a precast concrete wall in the middle of the structure to function as the overflow weir and protect the opening for the restrictor pipe.

69. The title of Detail 1, Drawing 18 was modified to "Pond Outflow Control Structure" to be consistent with the language on Drawing 13.

70. An alignment of a haul road from the borrow area to the landfill is provided on Drawing 11, which provides the borrow pit grading plan.

71. The spelling on Detail 1, Drawing 21 is corrected – "Construction Entrance".

72. Soil Erosion and Sediment Control (SESC) Note 21 on Drawing 34 states that "Areas of disturbed soil that shall remain inactive for 14 days or longer must have temporary or

permanent stabilization in place within 7 days per Section 02105 of the Specifications". If stockpiles remain inactive for 14 days or longer, they will be stabilized in accordance with SESC Note 21 on Drawing 34.

73. Section mark "E" is corrected to face the west direction on Detail 1, Drawing 23.

74. Detail 1 on Drawing 23 was revised to show the elevation of top of slab along the perimeter wall; and low point at the sump location. Because the rate of floor slope will change, only the high and low elevations are shown with arrows depicting slope direction towards the low point.

75. A "1" was added to the note in reference to the text "Note 1" for Detail 1, Drawing 23.

76. Under "Note", 250 PSF was changed to 100 PSF for Detail 1, Drawing 23.

77. The waterstop was removed (Section C, Drawing 24).

78. A waterstop was added (Section E, Drawing 24).

79. A note was added pointing to the corner of the wall and the floor slab: "T/SLAB ELEV VARIES" and "T/WALL ELEV VARIES" on Section E, Drawing 24.

80. On Section E, Drawing 24, the dimension that was showing the height of the wall was changed to "VARIES". The elevation of the top of the wall is provided.

81. The anchor bolt is "as specified by the manufacturer of the tank". A note regarding the anchor bolt was added to Detail 1 on Drawing 25.

82. The viewport of the Drawing is adjusted accordingly on Section 2, Drawing 26 so that the word "WHEN" is shown.

83. Diameter of the thickened pad was increased to 16 feet, which is a foot wider than the diameter of the tank. Therefore, there will be enough cover for the anchor bolts.

84. As noted in our Request for Partial Approval on 21 October 2014, Section A-A, Drawing 27 was revised to call out the depth of the earth cover.[1]

85. As noted in our Request for Partial Approval on 21 October 2014, hold-down straps will be installed. Note 7 was added to Drawing 27 to indicate that "underground tanks shall be installed with hold-down straps in accordance with manufacturer's recommendations".[1]

86. As noted in our Request for Partial Approval on 21 October 2014, Highland Tank (the manufacturer specified in the design) sells underground tanks that are designed, built and tested to the UL-58 standards which contains specifications for underground storage tank applications.[1]

87. As noted in our Request for Partial Approval on 21 October 2014, hold-down straps will be installed. Note 7 was added to Drawing 28 to indicate that "underground tanks shall be installed with hold-down straps in accordance with manufacturer's recommendations".[1]

88. As noted in our Request for Partial Approval on 21 October 2014, Highland Tank who is the manufacturer specified in the design sells underground tanks that are designed, built and tested to the UL-58 standards which contains specifications for underground storage tank applications.[1]

89. Note 3 on Drawing 30 was revised for the correct spelling of "anti-seize compound".

90. Detail 5, Drawing 32 was revised to change 8'-0" to 6'-0" and 6'-0" to 5'-0".

91. The schedule rating for post and rails were changed from schedule 40 to schedule 80 in Note 1, Detail 5, Drawing 32.

92. A note and symbols were added to Detail 1 on Drawing 33 to indicate locations of conduit seals.

93. Note 11 was added Drawing 33 to specify the types of conduit and panels.

94. The only areas that could be classified according to NEC Articles 500 & 501 are vapor spaces inside tanks (currently the vapor spaces do not yet exist and we do not expect these vapor spaces to be classified). There are no electrical connections inside the above ground leachate AST. Additionally, submersible pumps in the USTs are supplied with cords that extend outside the vapor space to the control panels (which are located outside the tanks and not in other classified areas). No equipment will be

energized in the vapor space of the tanks. The low level pump cutoff level for the submersible pumps is specified to be set to a point above the top of the submersible pumps.

95. The feeder distances and voltage drops were added to the single line diagrams on Detail 1 of Drawing 33.

96. The title of Detail 1, Drawing 33, was changed to “One Line Diagram”.

97. The items mentioned in the IEPA comment were labeled on Drawing 33.

98. The transformers are owned by the utility and the contractor is responsible to coordinate the removal of the two 25 KVA transformers and replacement with the three 75 KVA transformers.

99. The service ground location was added to Detail 1 of Drawing 33. The system does not have any loads with neutral conductors so a bonding jumper is not required.

100. The current transformer (CT) cabinet location was added to Drawing 33, and a note was included to provide support information.

101. The disconnect was moved adjacent to the CT cabinet to provide a single point of disconnection on Detail 1, Drawing 33.

102. The size of the power distribution panel was specified on Detail 1, Drawing 33 to indicate a minimum panel size with capacity for six three phase breakers. This panel size provides three spaces for future expansion.

103. A contactor control panel with multiple contactors was added and specified on Drawing 33. The contactor control panel is fed from a single breaker.

104. The individual contactors are fuse protected which will isolate a fault at the contactor control panel.

105. Panel 2 was relocated outside the limit of waste but was retained due to the distance between Panel 1 and Panels 2 and 3.

106. The breaker sizes were adjusted to be identical on Detail 1, Drawing 33.

107. A backup battery was added to the alarm panel in Detail 2, Drawing 33 to provide dial out capability in the event of a power failure.

108. Note 9 on Drawing 33 was added to verify the conversion of the motor from 240V to 480V was performed properly. An electrician previously verified the ratings of the equipment in the control panel.

109. The wires types for the alarm panel were labeled on Detail 2 of Drawing 33.

110. The only alarm signals sent to the alarm panel are for high levels. Note 14 (for Detail 1 of Drawing 33) was added to clarify high water level elevations.

111. The 25 KVA transformers will be removed and replaced with the 75 KVA transformers. This work is indicated on Detail 4 of Drawing 33. The label "30 KVA transformer" was supposed to be "Blower Control Panel", which was corrected on Detail 4 of Drawing 33.

112. Label "NE Pump Control Panel" was labeled wrong and it was corrected on Detail 4 of Drawing 33 to properly indicate "NW Pump Control Panel".

113. The existing 100A disconnect will be removed during the service upgrade, therefore it is not shown on Detail 4 of Drawing 33.

114. In Note 5, Drawing 34, the unit "psi" was changed to "psf". Note that during our review of Note 5, the 1,200 psf was revised to 1,350 psf

115. Reinforcement was revised for the truck pad slab. Based on this revision 3-in cover can be achieved. See Section B on Drawing 23 and Section C on Drawing 24.

116. In Note 16, Drawing 34, "detail 05, Drawing 20" was corrected to "Detail 4, Drawing 25".

117. Note 16, Drawing 34 was revised to 3/8" x 6" PVC as requested.

118. An additional sentence was added to Note 15, on Drawing 34 - "The contractor will attempt temporary fixes in cases where major work to sediment and erosion control measures are required."

119. An additional sentence was added to Note 23, on Drawing 34 - "The contractor is responsible to ensure vegetation is established for a warranty period of two full growing seasons."

120. The Drawing referral on Drawing 35 was updated.

121. System startup is considered to be the overall system performance testing. Paragraph A of Section 04050 – 3.01 was revised to provide more information on the overall system performance testing.

122. Division 0 contains the contract documents which were provided separately to the RA bidders during the bidding process. Division 0 of the specifications is not a technical specification for the proposed remedial design and should not have been included in Table 3-6. On page 22 of the Statement of Work (SOW) for the site there is a requirement that contracting strategy be addressed in the Remedial Design report. Section 7.1 of the Remedial Design Report addresses contracting strategy and has been updated to reflect the current contracting status. Therefore, Table 3-6 of Pre-Final Remedial Design Report has been revised to exclude Division 0 documents from Specifications.

123. Start time is changed to 7:30 AM in Section 01032 of the Specifications.

124. A dedicated workspace will be provided for the Illinois EPA representative in the construction field offices. This information has been added to Section 01500 of the Specifications.

125. Shredded organic material will be disposed at an offsite facility. This requirement was added to Section 02110 of the Specifications.

126. Geosyntec reviewed the grain size distribution curves of samples collected from existing cap and on-site west borrow area. This review indicated particle sizes are smaller than two inches in diameter. We are requesting changing the maximum particle diameter to two inches instead of the IEPA requested one inch diameter in order to reduce the need for screening.

127. The statement "Regardless of the target compaction criteria,…" was removed from Specification 02200.

128. General Fill is specified for the storm water benches. The reason that General Fill is restricted to cohesive soil is that it is less susceptible to washing than granular soils if it is subjected to storm water run-on before the vegetation is established. Geosyntec reviewed the grain size distribution curves of samples collected from the existing cap materials and the west borrow area. Particle sizes are smaller than two inches. We are requesting changing the maximum particle diameter to two inches instead of the IEPA requested one inch in order to reduce the need for screening.

129. The spelling correction of "pallets" was made in Specification 02200.

130. Stockpile locations were not specified and the bidders were asked to provide stockpile locations. The selected bidder (contractor) informed Geosyntec that he would be stockpiling only Vegetative Soil Layer at the top of landfill.

131. Paragraph 3.05C of Section 02200 is referenced to be specific to the crest area. Geosyntec is requesting to use 100 ft x 100 ft grid for Clay Fill verification instead of a 50 ft x 50 ft grid.

132. Paragraph 3.05E (revised to Paragraph 3.05D) was revised to clarify that this paragraph is in reference to the areas of the landfill where a final 3-ft thick Clay Fill thickness is achieved by compacting additional Clay Fill. Geosyntec is requesting to use 100 ft x 100 ft grid for Clay Fill verification instead of a 50 ft x 50 ft grid.

133. A note referring to Section 02200 - 3.06 for compaction requirements was added to the end of Note 7 for Details 1 and 2 on Drawing 8.

134. No calculations were performed for SDR 17 pipe. SDR was selected based on experience because the expected loads are "minimal" as it is mentioned in the comment.

135. Specification 02300 was revised accordingly to eliminate stockpiling of waste.

136. Section 02300, 3.02 P added to indicate that temporary construction fencing will be erected around any trenches that are left open overnight.

137. Paragraph E of Section 02300 – 3.03 of the Specification was revised to include "Storm water run-on shall be prevented from entering the Designated Refuse Area with placement of berms around the perimeter of the Designated Refuse Area."

138. Paragraph H of Section 02300 – 3.03 of the Specification was revised to state a minimum of six inches of soil should be used for daily cover.

139. Specification 02300 was clarified to indicate that leak testing is required for solid wall pipes. High pressure jetting requirement was added to Paragraph C of Section 04060 – 3.02, and video inspection requirement was added to Section 04060 – 3.03.

140. A new note was added as Paragraph D to Section 02400 – 3.01 of the Specifications to state "Methane gas accumulation is possible within the existing pipe. The Contractor should manage conditions within and in the vicinity of the pipe to prevent sparks that maybe generated in cutting the existing pipe".

141. Geosyntec believes the IEPA comment is in reference to Section 04300 rather than Section 02400. The reference in Section 04300 – 2.01 was revised to be "04200".

142. The vertical lettering shown in the last sentence in subsection I.2 was corrected.

143. The requested modifications to sentences in Section 03090, Part 2.05 have been made.

144. The requested additional language regarding buoyance was added to Section 05140 – 3.01 of the Specifications.

145. The change in the schedule rating of the posts in Section 06100, Part 2.01 was made as suggested by IEPA.

Should you have any questions on these responses, the Final Remedial Design Report, Final Design Drawings or Final Specifications please contact me at (312) 416-3909 or John Seymour at (312) 416-3919.

Sincerely,

Bradley D. Bodine, PE, CHMM
Project Manager

John Seymour, PE
Principal

Attachment: Figure 1 – Top Deck Grading Analysis
Final Remedial Design Report (Volume I)– dated January 2015
Final Remedial Design Drawings (Volume II) –Revised December 2014
Final Remedial Design Specifications (Volume III) – dated January 2015

Copies to: Eric Ballenger; BFINA (electronic copy)
R. Kimmell; Lathrop & Gage for BFINA (electronic copy)
Erin Rednour; IEPA (2 hardcopies, electronic copy) – (1 IEPA File copy)
Howard Caine; USEPA (1 hardcopy, electronic copy)
Jay Timm; IEPA (1 hard copy, electronic copy)
John Grabs; CDM-Smith (1 hardcopy, electronic copy)
J. Greenthal; Cashout Generator Settling Defendant (electronic copy)
K. McFadden; United Technologies-Cashout Generator Settling Defendant (electronic copy)

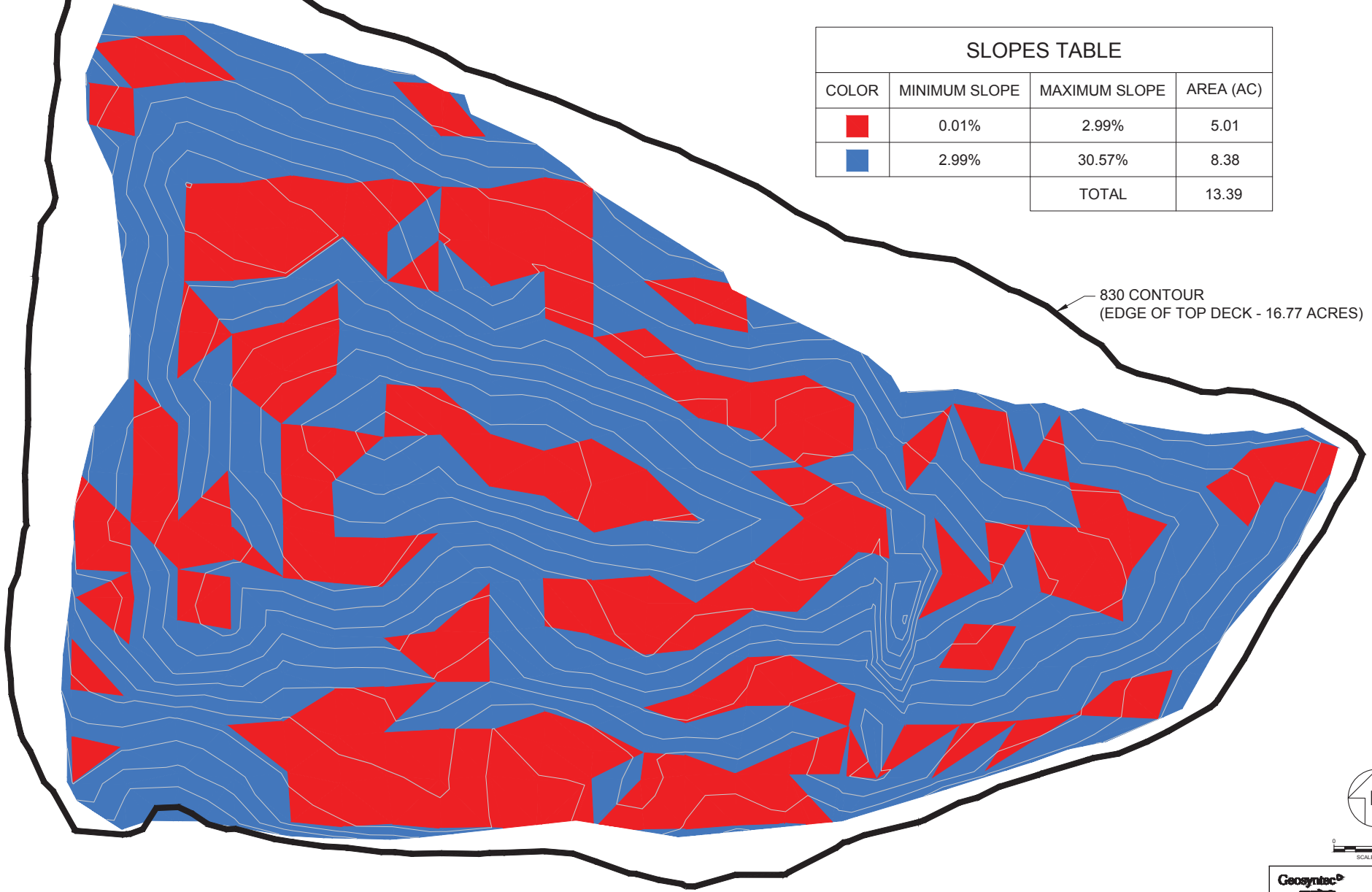

FIGURE 1 - TOP DECK GRADING ANALYSIS

Geosyntec consultants
CHICAGO, IL

DATE:	8/22/14	SCALE:	1" = 40'
PROJECT NO.	CHE8214	FILE NO.	
DOCUMENT NO.	1 OF 2	FIGURE NO.	1

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